

FIG. 1A

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE

INVENTORS NAME: Henrik Ditzel et al.

SERIAL NO.: 09/828,708

2/21

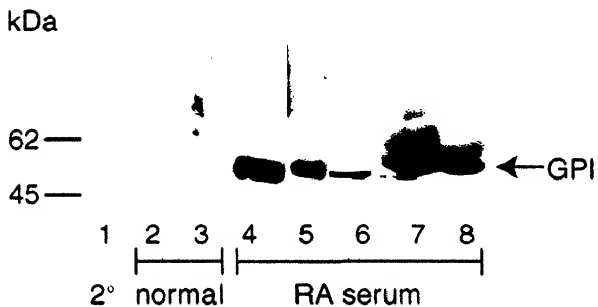


FIG. 1B

09828708.021102

3/21

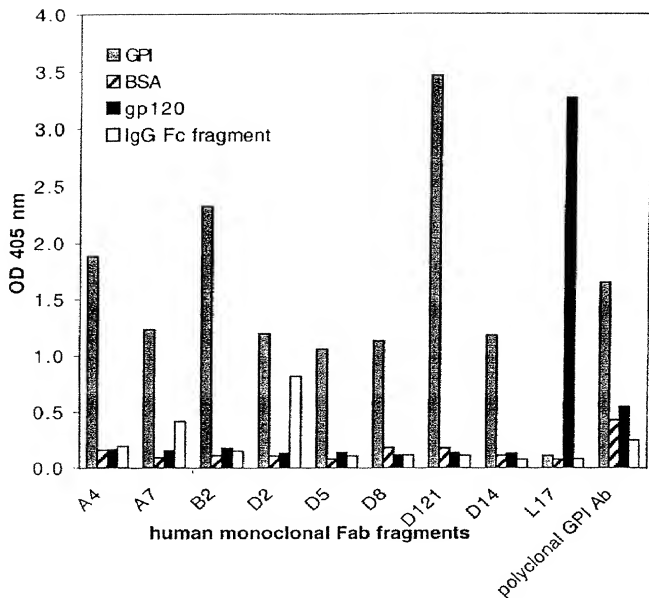


FIG. 2

4/21

Light Chain Variable AA Sequences

Name	SEQ ID No:	FR1	CDR1	FR2
A4	1	PDSLAVSLGERATINC	KSSQSVFYTSNNKNLYA	WYQOKPGQPPKLLIY
D2	2	PSFLSASVGDRTVITC	RASQGISSVYA	WYQLKPGKAPKLLIY
D121	3	PGTILSLPGERATILSC	RASQSVSSSYLA	WYQOKPGQAPRLLIY
B2	4	PDSLAVSLGERATINC	KSSQSVFYTSNNKNLYA	WYQOKPGQPPKLLIY
D14	5	PGTILSLPGEATILSC	RASQSVSSSYLA	WYQOKPGQAPRLLIY
D5	6	PGTILSLPGEATILSC	RASQSVSSSYLA	WYQOKPGQAPRLLIY
A7	7	PGTILSLPGERVTILSC	RASQSVSSSYLA	WYQOKPGQAPRLLIY
Name cont'd	CDR2	FR3	CDR3	FR4
A4	WASTRES	GVPDFRSGSGGTDFTLTISLQAEDVAVVYC	QYYYDSYT	FGQGTKLEIKRTVA
D2	AASTLQS	GVPRFSGSGGTEFTLTISLQPEDFAVYC	QQLNSYPLT	FGGGAkvGIRRTVA
D121	GASSRAT	GIPDRFSGSGGTDFTLTISRLEPEDFAVYC	QYYGSSPRT	FGQGTKVEIKRTVA
B2	WASTRES	GVPDFRSGSGGTDFTLTISLQAEDVAVVYC	QYYYDSYT	FGQGTKLEIKRTVA
D14	GASSRAT	GIPDRFSGSGGTDFTLTISRLEPEDTGTIVYC	QYYDNVDPDT	FGQGTIRLEIKRTVA
D5	GASSRAT	GIPDRFSGSGGTDFTLTISRLEPEDFAVYC	QYYGISPL	FGQGTIRLEIKRTVA
A7	GASSRAT	GIPDRFSGSGGTDFTLTISRLEPEDFAVYC	QYYGSSPRT	FGQGTKVEIKRTVA

FIG. 3AL

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

5/21

Heavy Chain Variable AA Sequences

Name	SEQ ID NO.	FR1	CDR1	FR2	CDR2
A4	8	GGGVQVQGRSLKLSAASGTFPS	SHGSH	WVRQAPGKGLEWVA	LLSDSGSNKFVIESVKG
D2	9	.....AW..LR...V.....	..TM.	.....	..TM.
D121	10	.....R.....	.YTF.	.....	VI..Y..NK..Y..AD....
B2	11	GAEVKPGTGVRIISCRASGNTFT	GHHIH	WVRQAPQGGQLEWVG	RINPTGGGVSLAQSFOD
D14	12	GGGLVQPGGSLRLSCATSGFIPN	SYAMN	WVRQAPGKGLEWVS	RISGNSGSTFYADSVKG
D5	13	GPGLVTPSQTLISLTCVPVPGSLK	GDSYFWS	WVRQPVGKGLEWIG	RIYGRGTTNYNRVFGS
A7	14	GAEVKKPGSSVKVSCRASGTFPS	RYAIS	WVRQAPQGGLEWVG	GIIPPFGPVNYAQKFQG
Name	SEQ ID NO.	FR3	CDR3	FR4	VH gene
A4	8	RFTISKDNKNTLYLQWNSLRIDDTAVYYCAI	SLVGTTAFNY	WGQGTLLTVTSS	VH3
D2	9	.....R.....LS...PE.....TN	.E...A...D.	.....	VH3
D121	10	.....R.....VE.....	.I.....	.....	VH3
B2	11	RVSILTRDRSNTVFLESLGLEEDTALYFCAR	PRFMIREPLDL	WGQGTLLTVTSS	VH1
D14	12	RFTISRDNSKNTAFLRMSQRAEDTAVYYCAK	DLSSGAYYYIGMDV	WGQGTLLTVTSS	VH3
D5	13	RVSMSVDMRSQPFLELRDVTAAADTAVYYCAR	DKSEYSYFDP	WGQGIIVNVFS	VH4
A7	14	RVTITADDSNTNAYMGLSSLRSGDTAVYYCAR	VAYDGGGYNNIPKIYYSYND	WGKGTLLTVTSS	VH1

FIG. 3AH

201120-80482860

TITLE: AUTOANTIBODIES TO GLUCOSE-1-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

6/21

Name	SEQ ID NO.	FR1	CDR1	FR2	CDR2
A4	8	GGGVQPGRLSLKSCAASGPTFS	SHGSH	WVRQAPGKLEWVA	LLSSDGSNKFYIESVKG
D2	9	.....AW..LR...V.....	..TW.		..TM.
D121	10	.....R.....	.YTF.		VI.Y..NK.Y.AD....
DP-46		.....R.....	.YAM.		VI.Y.....AD....
B2	11	GAEVKPGTSVRISCRASNTFT	GHHIH	WVRQAPGQGLQWVG	RINPTGGVSLAQSFQD
DP-7		....K...A..KV..K...Y...	SYNMH	.....E...	I...S..ST.Y..K..G
D14	12	GGGLVQPGGSLRLSCATSGIFN	SYAMN	WVRQAPGKLEWVS	RISNGSGSTFYADSVKG
VH26		.....A...T.S	....S		A...SG...Y.....
D5	13	GPGLVRPSOTLSLTCPVSPGSIK	GDSYFWS	WVRQPVGKGLEWIG	RIYGRGTTNNRVFGS
IGHCAK		....K.....T..G...S	SG..Y..	.I...A.....	...TS.S....PSLK.
A7	14	GAEVKPGSSVXVSCRASGTFIS	RYAIS	WVRQAPGQGLEWVG	GIIPPPGPNVYAKFQG
VH1-69		.....K.....	S....	.....	...I..TA.....

FIG. 3B

20TT20"80282860

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

7/21

Name cont'd	FR3	CDR3	FR4	VH gene
A4	RFTISKDNKNTLYIQMNSLRIDDTAVYYCAI	SLVGTTFAPNY	WGQGTILVTYSS	VH3
D2	....R.....LS...PE.....TN	.E..A...D.	.....	VH3
D121	.....R.....VE.....	.I.....	.....	VH3
DP-46	.....R.....AE.....R			
B2	RVSLTRDRSSNTVFLELSGLTBEDTALYFCAR	PRFNMIREPLDL	WGQGTIVTVSS	VH1
DP-7	..TM...T.TS..YM...S.RS...V.Y...			
D14	RTTISRDNKNTAFLRMNSQRAEDTAVYYCAK	DLSSGAYYYIGM	WGQGTIVTVSS	VH3
VH26	.....LY.Q...L.....	DV		
D5	RYSMSVDMRSQFFLELRDVTAAEDTAVYYCAR	DKGSEKSYFDP	WGQGTIVTVSS	VH4
IGHCAK	..TI...T.KN...S.K.SS.....			
A7	RVTTITADDSTNTAYMGLSLRSGDTAVYYCAR	VAYDGSQYNNI	WGKGTIVTVSS	VH1
VH1-69	.....K.S...E.....E.....	PKIYYSYMDV		

FIG. 3B Cont'd

8/21

Clone	Closest Germline	% amino acid homology	% nucleotide homology	R/S ratio FRs	R/S ratio CDRs
A4	DP-46	86	89	6/6:1.0	12/5:2.4
D2	DP-46	87	92	8/6:1.3	4/5:0.8
D121	DP-46	91	95	2/4:0.5	7/0:>7.0
B2	DP-7	67	79	20/17:1.2	<u>14/5:2.8</u>
D14	VH26	87	93	7/3:2.3	5/2:2.5
D5	IGHCAK	73	81	17/16:1.1	13/4:3.3
A7	VH1-69	90	94	7/2:3.5	5/0:>5.0

FIG. 3C

201120" 80482860

201120" 80482860

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

9/21

CDR's Heavy Chain

SEQ ID NO:	CDR1	SEQ ID NO:	CDR2	SEQ ID NO:	CDR3
15	SHGSH	22	LLSDSGNKFYIESVKG	29	SLVGTTFAPNY
16	.TM.	23	.IFY....Y.AD....	30	.E.A...D.
17	.YTF.	24	VI.Y..NK.Y.AD....	31	.I.....
18	GHHIH	25	RINPTGGVSLAQSFQD	32	PRFNWIREPLDL
19	SYAMN	26	RISGNSGTFYADSVKG	33	DLSSGATYYGMDV
20	GDSYFWS	27	RIYGRGTINYNRVFGS	34	DKGSEYSYFDP
21	RYAIS	28	GIIPPGFVNVAQKFOG	35	VAYDGGGYNNIPKIYYSYMDV

CDR's Light Chain

SEQ ID NO:	CDR1	SEQ ID NO:	CDR2	SEQ ID NO:	CDR3
36	KSSQSVFYTSNNKNYLA	43	WASTRES	50	QQYDYSVT
37	RASQGISVYLA	44	AASTLOS	51	QQLNSYPLT
38	RASQSVSSVYLA	45	GASSRAT	52	QQYGSSPRT
39	KSSQSVFYTSNNKNYLA	46	WASTRES	53	QQYDYSVT
40	RASQSVSSVYLA	47	GASSRAT	54	QQYDNPVDT
41	RASQSVSSVYLA	48	GASSRAT	55	QQYGTSPIL
42	RASQSVSSVYLA	49	GASSRAT	56	QQYGSSPRT

FIG. 4A

10/21

Framework Regions, Heavy Chain

SEQ ID	FR1	SEQ ID	FR2
NO:		NO:	
57	GGGVVQPGRSRLKLSCAASGFTFS	64	WVROAPGKLEWVA
58	.....AW..LR...V.....	64	.....
59	.....R.....	64	.....
60	CAEVKPGTGVRI SCRASGNTFT	65	WVROAPGQGLQWVG
61	GGGLVQPGGSLRLSCATSGFIEN	66	WVROAPGKLEWVS
62	GPGLVRPSQTL SLTCTPVSFSGIK	67	WVRQPVGKLEWIG
63	CAEVKPGSSVKVSCRASGFTFS	68	WVROAPGQGLQWVG
SEQ ID	FR3	SEQ ID	FR4
NO:		NO:	
69	RFTISKDMSKNTLYLQMNSLRIDDTAVYYCAI	76	WGQGTIVTVYSS
70	.....R.....LS...PE.....TN	76	.....
71	.....R.....VE.....	76	.....
72	RVSILTRDRSSNTVFLELSGLTEEDTALYFCAR	77	WGQGTIVTVYSS
73	RFTISRDNKNTAFLRMNSQRAEDTAVYYCAK	78	WGQGTIVTVYSS
74	RVSMSVDMRSRQFFLELRDVTAAADTAVYYCAR	79	WGQGIIVNVYFS
75	RVTITADDSTNTAYMGLSSLRSRGDTAVYYCAR	80	WGKGTIVTVYSS

FIG. 4B

11/21

Framework Regions, Light Chain

SEQ ID NO:	FR1	SEQ ID NO:	FR2	SEQ ID NO:	FR4
81	PDSLAVSLGERATINC	88	WYQQKPGQPPKLLIY		FGQGTKLEIKRTVA
82	PSFLSASVGDRTITIC	89	WYQLKPGKAPKLLIY		FGGGAKEVIRRTVA
83	PGTSLSPGERATLSC	90	WYQQKPGQAPRLIY		FGQGTKVEIKRTVA
84	PDSLAVSLGERATINC	91	WYQQKPGQPPKLLIY		FGQGTKLEIKRTVA
85	PGTSLSPGEGATLSC	92	WYQQRPGQAPRLIY		FGQGTRELKRTVA
86	PGTSLSPGEGATLSC	93	WYQQKPGQAPRLIY		FGQGTRELKRTVA
87	PGTSLSPGERVTLSC	94	WYQQKPGQAPRLIY		FGQGTKVEIKRTVA
SEQ ID NO:	FR3	SEQ ID NO:		SEQ ID NO:	
95	GVPDFSGSGGTDFTLTISLQAEDVAVYYC	102			
96	GVPSFSGSGGTFTLTISLQPEDFAVYYC	103			
97	GIPDRFSGSGGTDFTLTISRLPEDEFAVYYC	104			
98	GVPDFSGSGGTDFTLTISLQAEDVAVYYC	105			
99	GIPDRFSGSGGTDFTLTISLQPEDIGTYVC	106			
100	GIPDRFSGSGGTDFTLTISRLPEDEFAVYYC	107			
101	GIPDRFSGSGGTDFTLTISRLPEDEFAVYYC	108			

FIG. 4B Cont'd

12/21

LIGHT CHAIN NUCLEOTIDE SEQUENCE OF ANTI-GPI ANTIBODIES

A4 - SEQ ID NO:112

CCAGACTCCCTGGCTGTCTCTGGGCGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTCTTTTACACTTCCAAACAATAA
 GAACCTACTTAGCTTGTATCCAGCAGAAACAGGCCAGCTCTTAAGTTGCTCATTTACTGGGCATCCACCCGGGAATCCCGGGTCC
 CTGACCGATTTCAGTGGCAGCGGTCTGGGACAGATTTCATCTCTCACCATCAGACGCTGCAAGGCTGAAGAATGTGGCAGTTTATTAC
 TGTACGCAATATATATGATTGTAACATTTTGGCCAGGGGACCAAGCTGGAGATCAAAACGAACCTGTGGCT

D2 - SEQ ID NO:113

CCATCCTTCCTGTCTGTAGGAGACAGAGTCCACATCACTTCCGGGCCAGTCAAGGCCATTAGCAGTTATTAGCCTGGTAT
 CAGCTAAACCCGGGAAAGCCCTTAAGCTCTCTGATCTATGTGCAATCCACTTTGCAAGTGGGGTCCCATCAAGTTTCAGCGGCAG
 TGGATCTGGGACAGAAATTCATCTCACAATAAGCAGCTGCAGCCCTGAAGAATTTGCAACTTATTACTGTCAACAGCTTAATAGTT
 ACCCTCTCACTTTCGGGCGGAGGGGCCAAGGTGGGGATCAGACGAACCTGTGGCT

D121 - SEQ ID NO:114

CCAGGCAACCTGTCTTGTCTCCAGGGGAAAGAGCCACCTCTCTGTCAAGGCCAGTCAGAGTGTAGCAGCAGCTACTTAGCCTG
 GTACACAGAGAAACCTGGCCAGGCTCCAGGCTCTCATCTATGTGTGCATCCAGCAGGGCCACTGGGATCCAGACAGGTTCAGTG
 GCAGTGGGTCTGGGACAGACTTCACTCTCACCAATCAGCAGACTGGAGCCCTGAAGAATTTGCAGTGTATTACTGTGACGACAGTATGCT
 AGCTCACTGGACGTTCTGGCCAAAGGACCAAGGTGGAATCAACGAACCTGTGGCT

B2 - SEQ ID NO:115

CCAGACTCCCTGGCTGTCTCTGGGCGAGAGGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTCTTTTACACTTCCAAACAATAA
 GAACCTACTTAGCTTGTATCCAGCAGAAACAGGCCAGCTCTTAAGTTGCTCATTTACTGGGCATCCACCCGGGAATCCCGGGTCC
 CTGACCGATTTCAGTGGCAGCGGTCTGGGACAGATTTCATCTCACCATCAGCAGCCTGCAAGGCTGAAGAATGTGGCAGTTTATTAC
 TGTACGCAATATATGATTGTAACATTTTGGCCAGGGGACCAAGCTGGAGATCAACCGAACCTGTGGCT

FIG. 5A

13/21

D14 - SEQ ID NO:116

CCAGGCACCCCTGTCTATTTGTCTCCAGGGGAAGGAGCCACCCTCTCTCTCAGGGCCAGTCAGAGTGTTAGCAGCAGCTACCTAGCCTG
 GTATCAGCAGAGACCTTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCATCCAGAGGCCACCGGCATCCAGACAGATTCAGTG
 GAAGTGGATCTGGGACAGATTTGATCACCATCAGCAGCTCTGACGCTGAGAGTACTGGACATATTACTGTCAACAATATGAT
 AATGTCCCTGACACACTTTTGGCCAGGGGACCAGGCTGGAGATCAACGAAACTGTGGCT

D5 - SEQ ID NO:117

CCAGGCACCCCTGTCTTTGTCTCCAGGGGAAGGAGCCACCCTCTCTGACGGGCCAGTCAGAGTGTTAGCAGCAGCTACTTAGCCTG
 GTACCCAGAGAAACCTTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCATCCAGTAGGCCACTGGCATCCAGACAGGTTCACTG
 GCAGTGGGTCTGGGACAGACTTCACCTCAACATCAGCAGACTGGAGCCTGAAGATTTTTCAGTGTATTAATCTGTACGCAAGTATGGT
 ACCT CACCCCTCTGGGCCAAGGACACGACTGGAGATTAACGAACTGTGGCT

A7 - SEQ ID NO:118

CCAGGCACCCCTGTCTTTGTCTCCAGGGGAAGAGTCACTCTCTCTGACGGGCCAGTCAGAGTGTTAGCAGCAGTACTTAGCCTG
 GTACCCAGAGAAACCTTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCATCCAGAGGGCCACTGGCATCCAGACAGGTTCACTG
 GCAGTGGGTCTGGGACAGACTTCACCTCAACATCAGCAGACTGGAGCCTGAAGACTTTGCACTTTATTAATCTGTACGCAAGTATGGA
 AGCTCACTCGGACGTTGGCCAAAGGACCAAGGTGGAAATCAACGAACTGTGGCT

FIG. 5A Cont'd

201120*80482860

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

14/21

HEAVY CHAIN NUCLEOTIDE SEQUENCE OF ANTI-GPI ANTIBODIES

A4-H - SEQ ID NO:116

GAGGGCTGGTCCAGCCTGGGAGGTCCCTGAAACTCTCCTGTGCGAGCCTCTGGATTCAATTCAGTCACTGCTCGCACTGGGTC
CGCCAAGCTCCAGGCAAGGGCTGGAGTGGTGGCACTTTTGTCTGATGGAAAGTAATAAATTTCTATATAGAAATCCCGTGAAGG
GCGGATTCACCATCTCCAAGGACAATTTCTAAGAACAACACTGTATCTGCAAAATGAACAGCCTGAGAAITGACGACACGGCTGTCTAT
TACTGTGCGAATTTCCCTGTGTGGGAACACTACCGCTTTTAACTACTGGGGCCAGGGAACCCCTGGTCAACCGTCTCCTCA

D2-H - SEQ ID NO:117

GCGGTGTCACCAAGCATGGAGGTCCCTAAGACCTCTCCTGTGTAGCCTGTGGAATTCACCTTCAGTAGTCATACCATGCACCTGGGTCCG
CCAGGCTCCAGGCAAGGGCTGGAGTGGTGGCACTTATTTCTATGATGGAAGTAATAAATACTATGCAGACTCCGTGAAAGGGC
CGAATTCACCATCTCCAGACAATTCGAAGAACACGCTGTATCTGCAATTGAGCAGCCTAAGACCTGAGGACACGGCTGTCTAATA
TTGTACGAATTCGAGGTGGAGCTACCGCTTTTGTACTACTGGGGCCAGGGAACCCCTGGTCAACCGTCTCCTCAG

D121-H - SEQ ID NO:118

GGGAGCGGTGGTCCAGCCTGGGAGGTCCCTGAGACTTTCTCTGTGAGCCTCTGGATTCACCTTCAGTTCCTATACTTTCCACTGG
GTCCGCCAGGCTCCAGGCAAGGGCTGGAGTGGTGGCAGTTATATCATATGATGGAAACAAGAAATACTACCGAGACTCCGTGA
AGGGCCGATTCACCATCTCCAGAGACAATTCGAAGACAACCTATATCTGCAAAATGAACAGCCTGAGAGTTGAGGACACGGCTGT
TATTACTGTGCGAATTCATAGTGGGAACACTACCGCTTTTAACTACTGGGGCCAGGGAACCCCTGGTCAACCGTCTCCTC

FIG. 5B

15/21

201120" 80/82860

B2-H - SEQ ID NO:119

GGGGCTGAGGGTGAGGAAGCCCGGAOCTCCGTGAGGATCTCTTGACGGGATCTGGAAACACCTTCACTGGCCACCATATTCACGTG
 GGTCCGCCAGGCCCTGGACAAAGGCTTCAGTGGATGGGAAGATCAACCCGACTGGCGGGGGTATGTCTCGACAGAGTTTC
 CAGACAGATGCAGCCTGACAGGACAGGTGTCCAAATACAGTCTCTTGAACTGAGCGGCCCTCACGGAGGAGGACACGGCT
 TATATTCTGTGCGAGGCCCGGATTTAACATGATCCGGGAACCTCTTGACTCTGGGCCAGGGGACAGTGGTCAACCGTCTCTCA

D14-H - SEQ ID NO:120

GGGGGAGGCTTGGTACAGCCTGGGGGTCCTGAGACTCTCTGTGCAACCTCTGGATTCATCTTTAACAGCTATGCCATGAACGTG
 GGTCCGCCAGGCTCCAAGGGAAGGGCTTGAGTGGGTCTCAGTATAGTGGAAATAGTGGAGGACATCTACCGAGACTCCGTG
 AAGGGCCGTTTCAACATCTCCAGAGACAATTCCAAGAACACGGCGTTCTGCGAATGAACAGCCAGAGAGCCGAGAGACACGGCG
 TTATTTACTGTGCGAAAGATCTGTGCGAGTGGTGCACTACTACTACGGGATGGACGTCTGGGGCCCAAGGGACACCGTCAACCGTC
 TCCTCA

D5-H - SEQ ID NO:121

GGCCAGGATGGTGAGGCCATCAGACCCCTATCCCTCACCTGCACCTGTCTCCAGGCTCCATTAAAGGTGATAGTTACTTCTGG
 AGCTGGGTCCGTGAGCCGTAGGAGGAGGAGTGGATGAGGGGTATCTACGGCAGAGGGATACCAATTACACCGTGTTT
 TCGGAGTCGAGTCAGTATGTGAGTGCATGTCAGGAGTCAGTTTCTTGAAATTGAGAGATGTAACCCCGCCGACACACGGCC
 GCTATTACTGTGGGAGAGACAAGGGGTCCGAAATCTCCTACTTTGACCCCTGGGGCCAGGGGAATAGTGTGCAACGTTCTCTCA

FIG. 5B Cont'd

201120' 80482860

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

16/21

A7-H - SEQ ID NO:122

GGGCTCAGGTGAAGAAGCCTGGTCTCCTCGGTGAAGTCTCCTCAGGGCTTCTGGAGGCACATTCAGCAGATATGCTA
TCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGGAGGGATCATCCTCCCTTTGGTCCAGTAAACT
ACGCACAGAAGTTCAGGGCAGAGTCACGATTACCGCGGACGATTCCACGAACACAGCCTACATGGGTCTGAGCAGCC
TGAGATCTGGGGACACGGCCGTGTATTACTGCGCGAGAGTGGCCTATGATGGTAGTGGCTATTACACAATATCCCAA
AGATCTACTACTCTACATGGACGTCTGGGGCAAAGGGACCAACGGTACCGGTGTCCTCAGC

FIG. 5B Cont'd

17/21

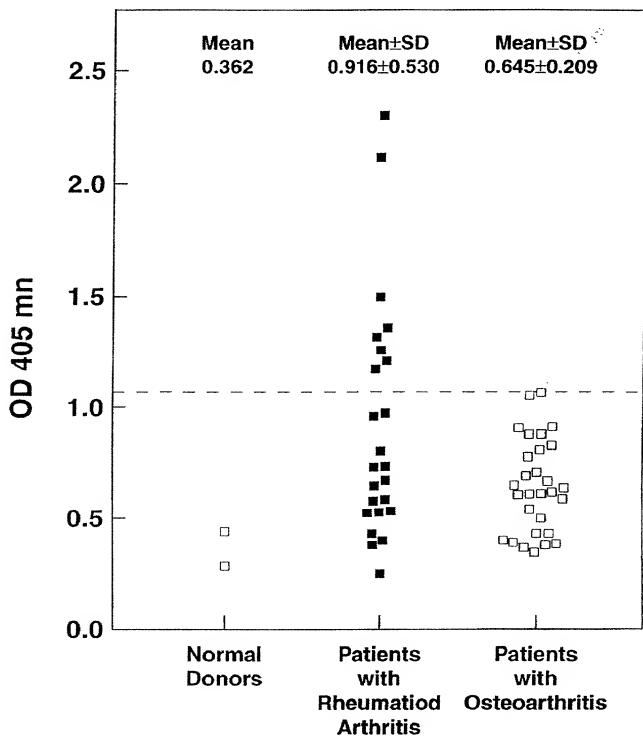


FIG. 6

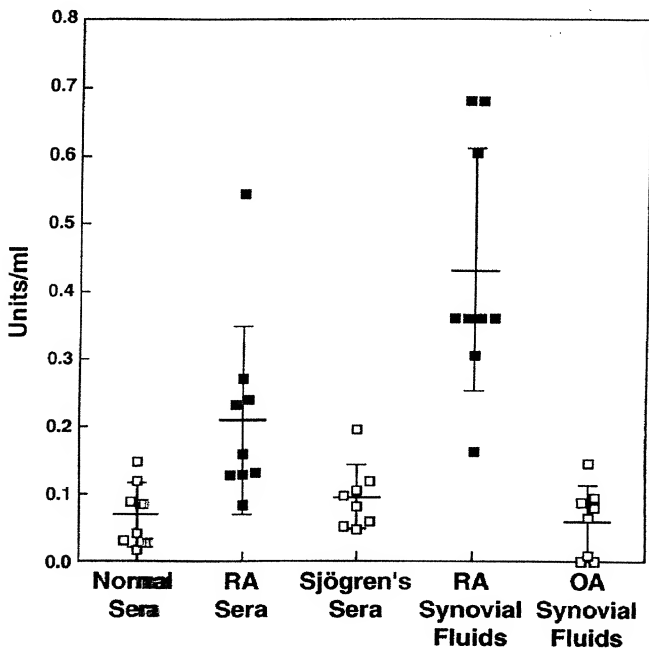


FIG. 7

19/21

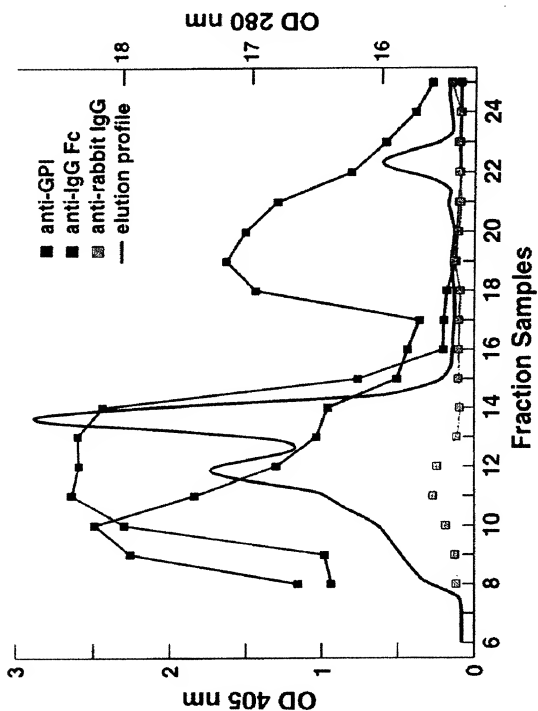


FIG. 8A

201120180782860



FIG. 8B



FIG. 8C

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR
PARTICIPATION IN AUTOIMMUNE DISEASE
INVENTORS NAME: Henrik Ditzel et al.
SERIAL NO.: 09/828,708

21/21

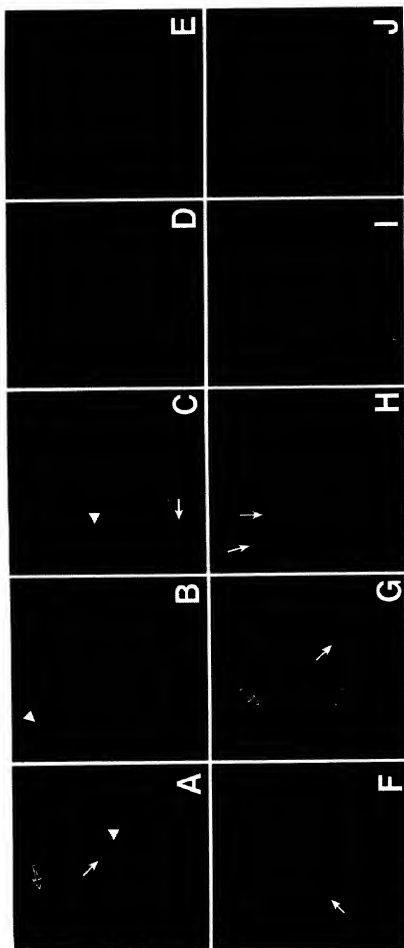


FIG. 9